

**WHAT IS CLAIMED IS:**

1. A method of designing an information flow process, comprising the steps of:  
determining a predetermined set of activity names in a predetermined sequence,  
5 the activity names respectively representing certain service operations;  
displaying the activity names as information provider activity names and  
information consumer activity names according to the predetermined sequence in a  
predetermined data flow definition (DFD) matrix format;  
specifying an information name, one of the information provider activity names  
10 and a corresponding one of the information consumer activity names, the information name  
at a position in the predetermined DFD matrix format representing data to be transmitted  
from the information provider activity name to the information consumer activity name;  
and  
storing the relations among the information provider activity names, the  
15 information names and the information consumer activity names in an entity relation (ER)  
source information file.
2. The method of designing an information flow process according to claim 1 further  
comprising additional steps of:  
20 modifying the activity names; and  
updating said displaying of the activity names in the predetermined DFD matrix  
format; and  
storing the modified activity names in the ER source information file.
- 25 3. The method of designing an information flow process according to claim 1 further  
comprising additional steps of:  
modifying the predetermined sequence for the activity names; and  
updating said displaying the activity names in the predetermined DFD matrix  
format according to the modified predetermined sequence; and  
30 storing the modified predetermined sequence of the activity names in the ER  
source information file.

4. The method of designing an information flow process according to claim 1 further comprising additional steps of:

modifying the information names; and

updating said displaying of the information names in the predetermined DFD

5 matrix format; and

storing the modified information names in the ER source information file.

5. The method of designing an information flow process according to claim 1 further comprising additional steps of:

10 modifying the positions of the information names; and

updating said displaying the information names in the predetermined DFD matrix format at the modified positions; and

storing the modified positions of the information names in the ER source information file.

15

6. The method of designing an information flow process according to claim 1 further comprising additional steps of:

further determining associated detailed activities of a selected one of the activity names;

20 updating said displaying the activity names in the predetermined DFD matrix format based upon the associated detailed activities; and

storing the activity names with the associated detailed activities in the ER source information file.

25 7. The method of designing an information flow process according to claim 6 wherein said further determining step additionally includes the steps of:

preparing a structure data flow (SDF) input screen based upon the ER source information file; and

30 receiving user input data for the associated detailed activities via the SDF input screen.

8. The method of designing an information flow process according to claim 7 wherein the SDF input screen displays an information provider activity name, an input information name, a detailed activity name, an output information name and an information consumer activity name.

5

9. The method of designing an information flow process according to claim 1 further comprising additional steps of:

displaying a service function design table based upon information from the ER source information file, the service function design table allowing a user to define a new service function;

10

receiving user input data at least for systematization factors; and

storing the systematization factors and the information in the service function design table as a new function description.

15

10. The method of designing an information flow process according to claim 9 wherein the user input data includes activity contents and subjects.

11. The method of designing an information flow process according to claim 9 further comprising an additional step of printing the new function description.

20

12. The method of designing an information flow process according to claim 1 further comprising additional steps of:

displaying a service information design table based upon information from the ER source information file, the service information design table allowing a user to define new service information;

25

receiving user input data at least for systematization factors; and

storing the systematization factors and the information in the service information design table as an input/output information overview.

30

13. The method of designing an information flow process according to claim 12 wherein the user input data includes activity contents and subjects.

14. The method of designing an information flow process according to claim 12 further comprising an additional step of printing the input/output information overview.

15. The method of designing an information flow process according to claim 1 further comprising additional steps of:

selecting sequential pairs of the activity names and the information names from the DFD matrix;

storing the sequential pairs of the activity names and the information names into an event trace table;

10 reading one of the activity names from the event trace table;

displaying the one of the activity names in an event record column in an event trace diagram;

reading a corresponding one of the information names from the event trace; and

displaying the corresponding one of the information names in a row that

15 corresponds to the one of the activity names in the event record column.

16. The method of designing an information flow process according to claim 15 further comprising an additional step of printing the event trace diagram.

20 17. A medium storing a computer program for designing an information flow process, the computer program performing the tasks of:

determining a predetermined set of activity names in a predetermined sequence, the activity names respectively representing certain service operations;

25 displaying the activity names as information provider activity names and information consumer activity names according to the predetermined sequence in a predetermined data flow definition (DFD) matrix format;

specifying an information name, one of the information provider activity names and a corresponding one of the information consumer activity names, the information name at a position in the predetermined DFD matrix format representing data to be transmitted  
30 from the information provider activity name to the information consumer activity name;  
and

storing the relations among the information provider activity names, the information names and the information consumer activity names in an entity relation (ER) source information file.

- 5 18. The medium storing a computer program for designing an information flow process according to claim 17 further performing additional tasks of:
- modifying the activity names; and
  - updating said displaying of the activity names in the predetermined DFD matrix format; and
- 10 storing the modified activity names in the ER source information file.
19. The medium storing a computer program for designing an information flow process according to claim 17 further performing additional tasks of:
- modifying the predetermined sequence for the activity names; and
  - 15 updating said displaying the activity names in the predetermined DFD matrix format according to the modified predetermined sequence; and
  - storing the modified predetermined sequence of the activity names in the ER source information file.
- 20 20. The medium storing a computer program for designing an information flow process according to claim 17 further performing additional tasks of:
- modifying the information names; and
  - updating said displaying of the information names in the predetermined DFD matrix format; and
- 25 storing the modified information names in the ER source information file.
21. The medium storing a computer program for designing an information flow process according to claim 17 further performing additional tasks of:
- modifying the positions of the information names; and
  - 30 updating said displaying the information names in the predetermined DFD matrix format at the modified positions; and

storing the modified positions of the information names in the ER source information file.

22. The medium storing a computer program for designing an information flow process according to claim 17 further performing additional tasks of:

further determining associated detailed activities of a selected one of the activity names;

updating said displaying the activity names in the predetermined DFD matrix format based upon the associated detailed activities; and

- storing the activity names with the associated detailed activities in the ER source information file.

23. The medium storing a computer program for designing an information flow process according to claim 22 wherein said further determining task additionally includes the tasks of:

preparing a structure data flow (SDF) input screen based upon the ER source information file; and

receiving user input data for the associated detailed activities via the SDF input screen.

24. The medium storing a computer program for designing an information flow process according to claim 23 wherein the SDF input screen displays an information provider activity name, an input information name, a detailed activity name, an output information name and an information consumer activity name.

25. The medium storing a computer program for designing an information flow process according to claim 17 further performing additional tasks of:

displaying a service function design table based upon information from the ER source information file, the service function design table allowing a user to define a new service function;

receiving user input data at least for systematization factors; and

storing the systematization factors and the information in the service function design table as a new function description.

26. The medium storing a computer program for designing an information flow process  
5 according to claim 25 wherein the user input data includes activity contents and subjects.

27. The medium storing a computer program for designing an information flow process according to claim 25 further comprising an additional task of printing the new function description.

10

28. The medium storing a computer program for designing an information flow process according to claim 17 further comprising additional tasks of:

displaying a service information design table based upon information from the ER source information file, the service information design table allowing a user to define  
15 new service information;

receiving user input data at least for systematization factors; and

storing the systematization factors and the information in the service information design table as an input/output information overview.

29. The medium storing a computer program for designing an information flow process according to claim 28 wherein the user input data includes activity contents and subjects.

30. The medium storing a computer program for designing an information flow process according to claim 28 further comprising an additional step of printing the input/output  
25 information overview.

31. The medium storing a computer program for designing an information flow process according to claim 17 further comprising additional tasks of:

selecting sequential pairs of the activity names and the information names from  
30 the DFD matrix;

storing the sequential pairs of the activity names and the information names into an event trace table;

reading one of the activity names from the event trace table;  
displaying the one of the activity names in an event record column in an event  
trace diagram;

- 5       reading a corresponding one of the information names from the event trace; and  
displaying the corresponding one of the information names in a row that  
corresponds to the one of the activity names in the event record column.

32. The medium storing a computer program for designing an information flow process  
according to claim 31 further comprising an additional task of printing the event trace  
10    diagram.

15